

Commerce General Architecture

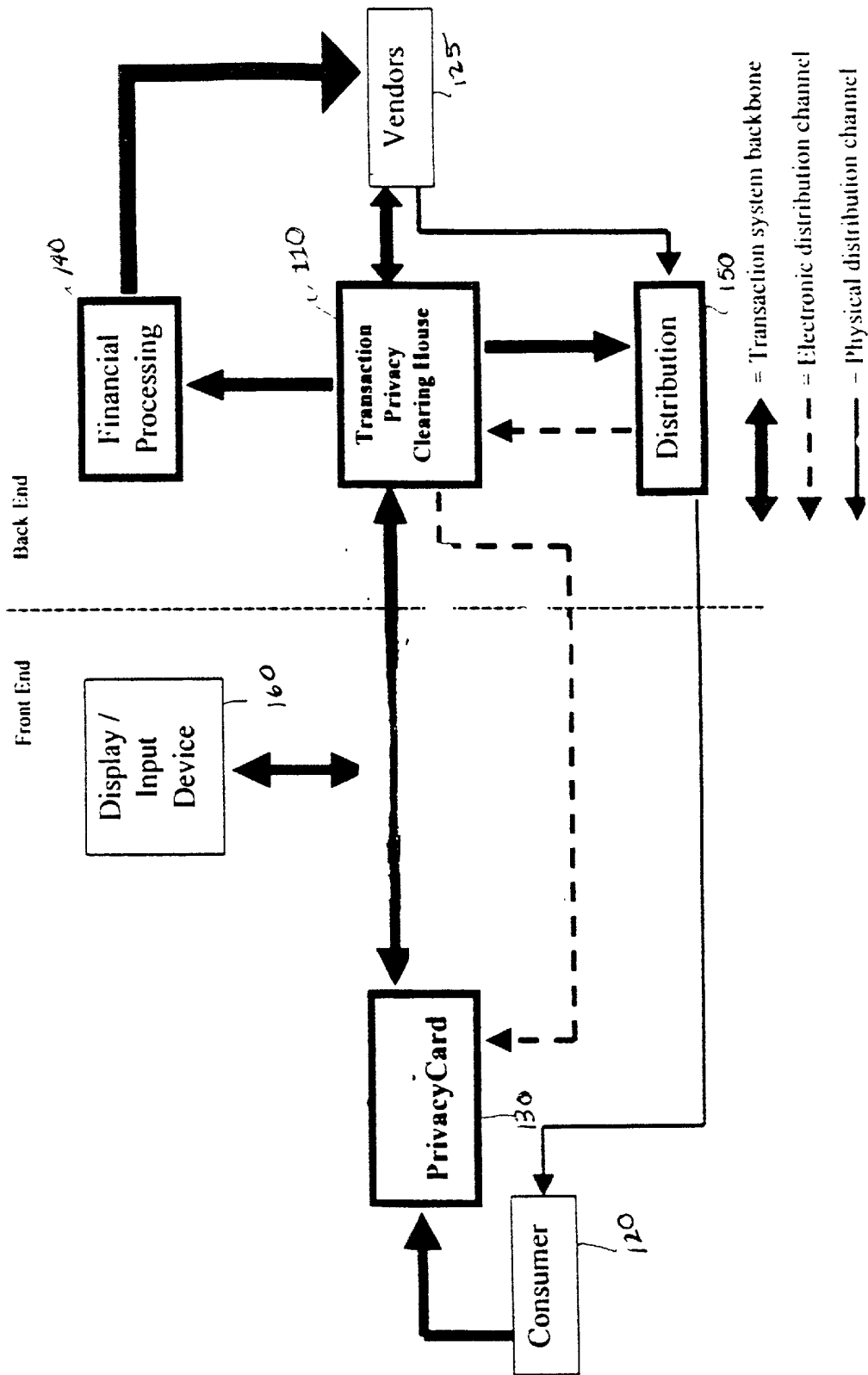


Fig 1

Commerce General Architecture - POS Terminal:

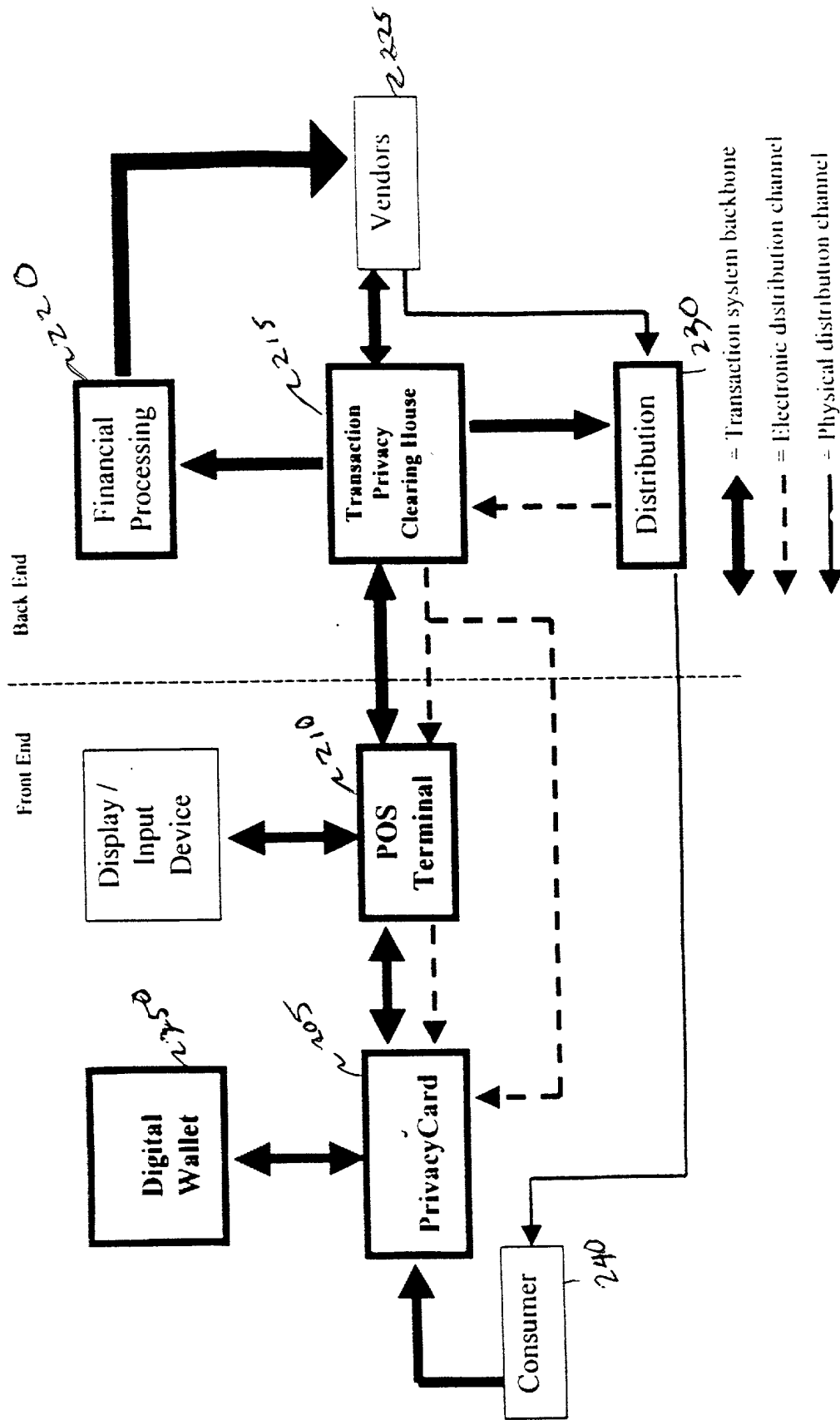


Fig 2

Commerce In-Home Environment

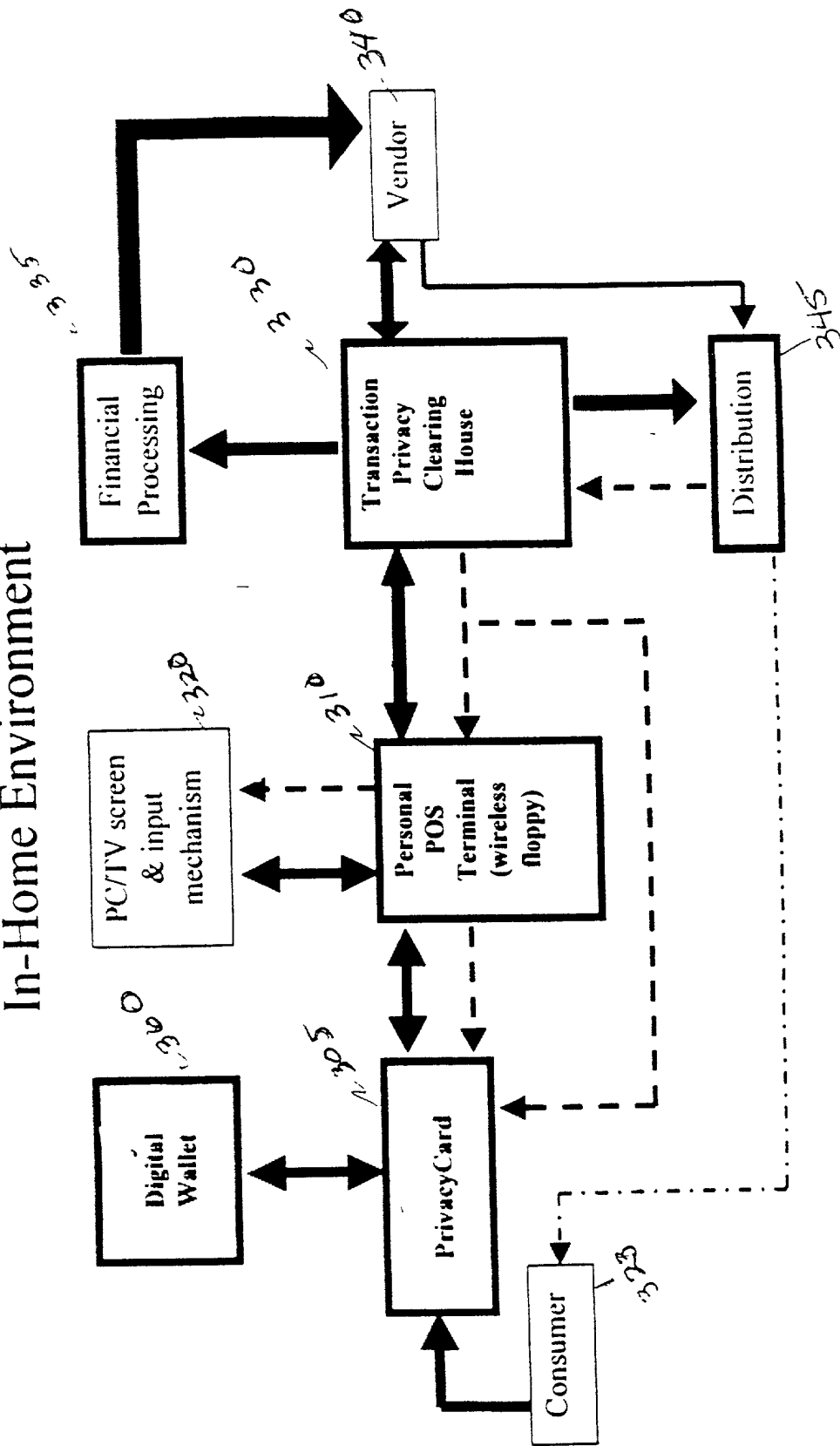


Fig 3

In-Store Retail Environment

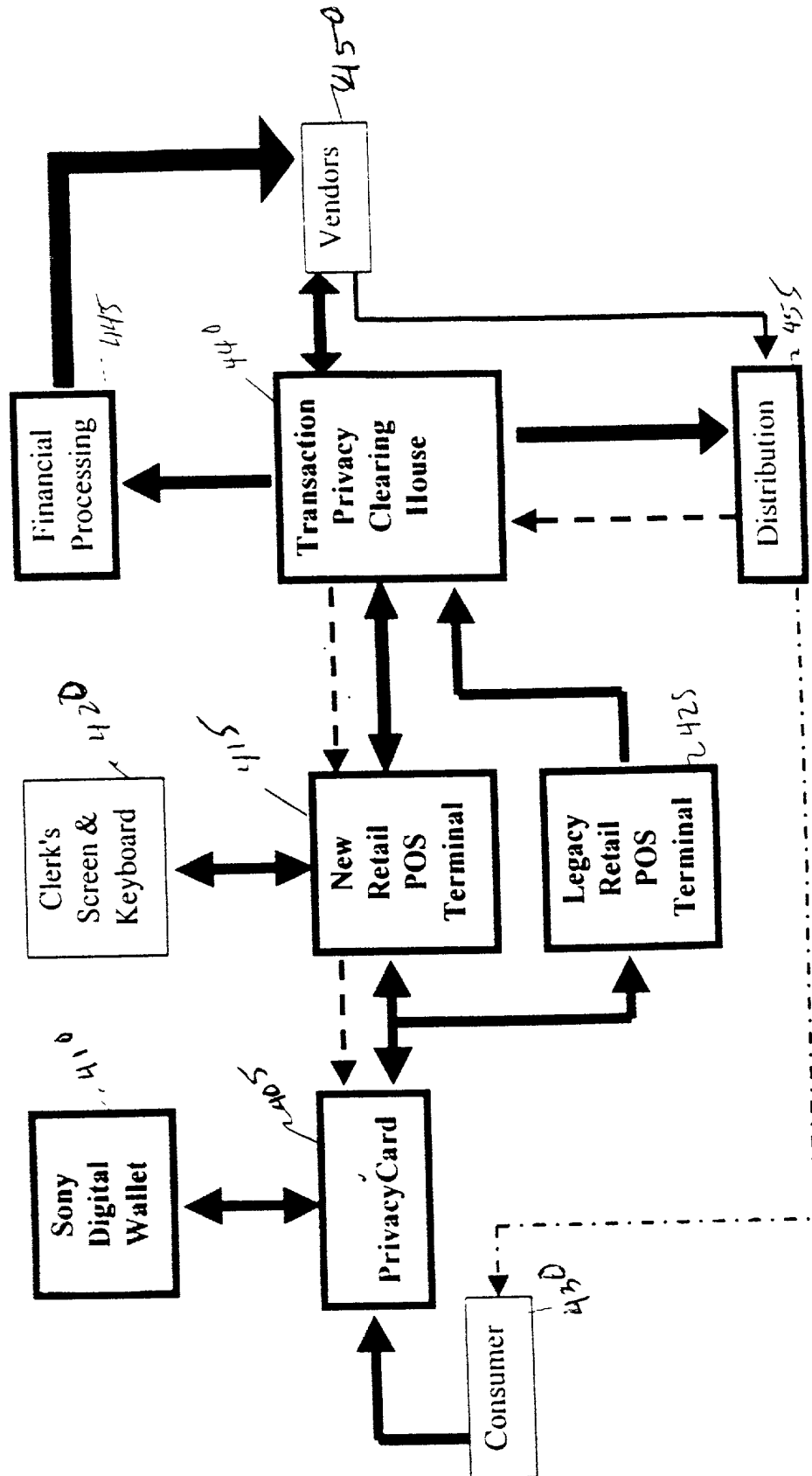
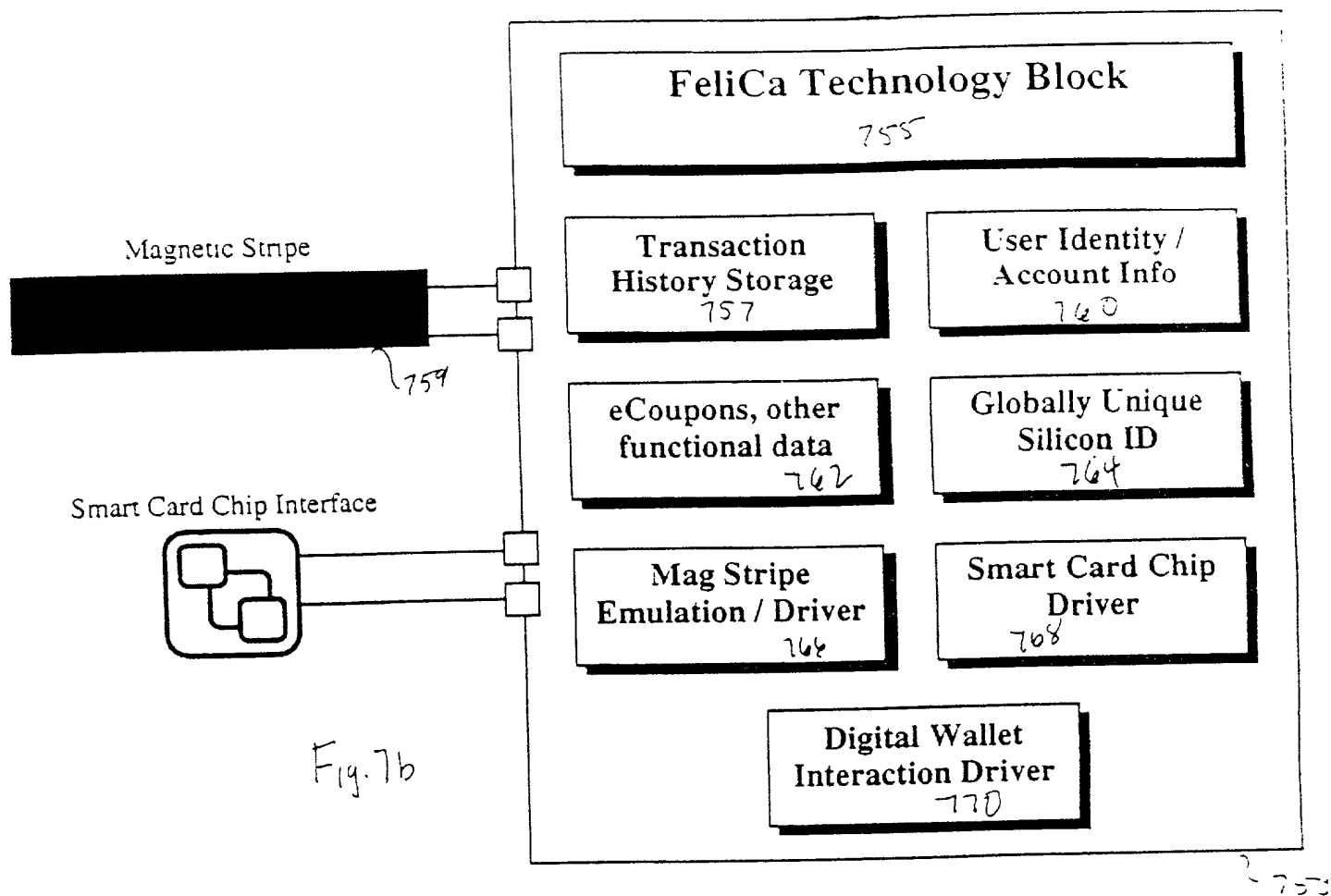


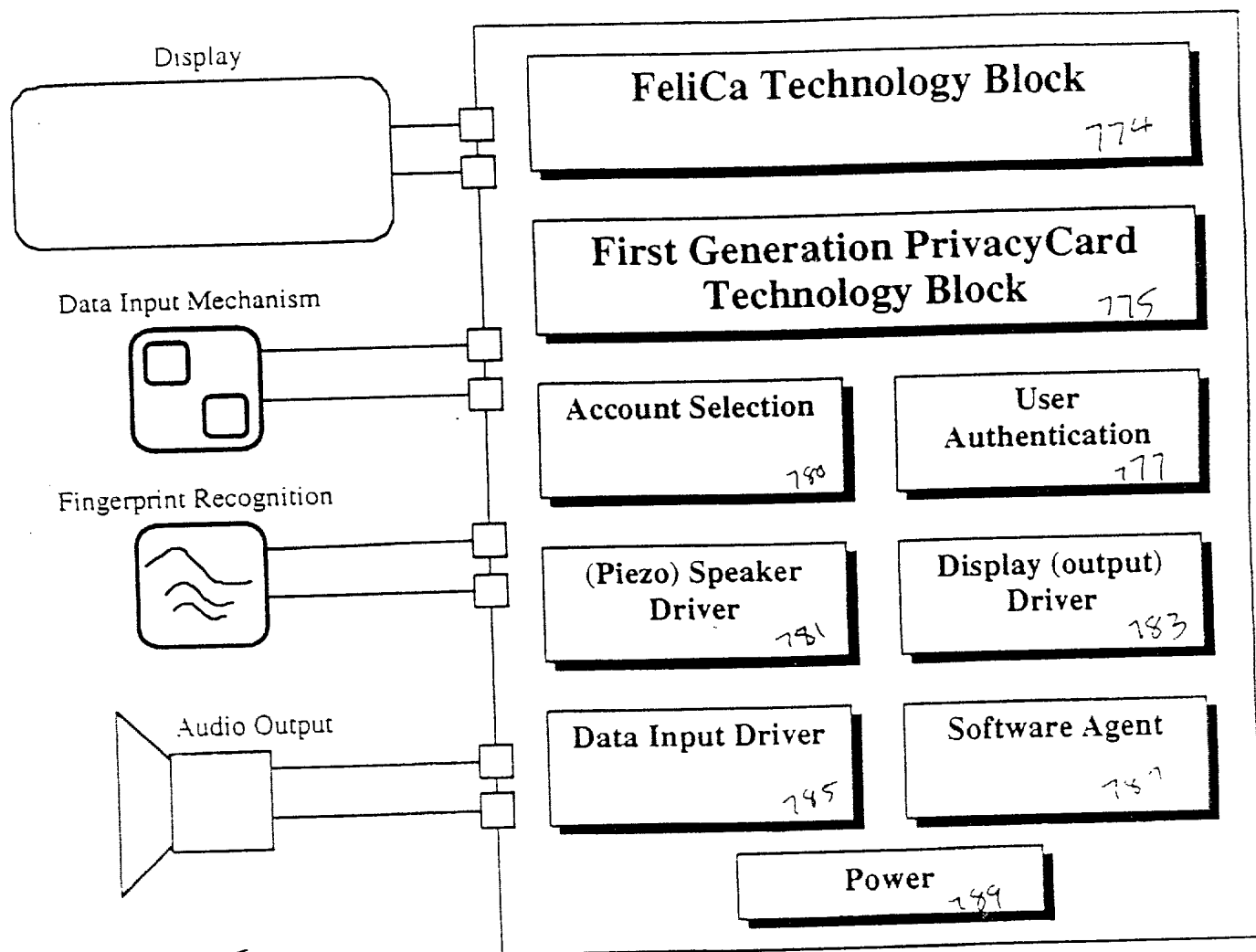
Fig 4

The diagram illustrates a transaction processing system architecture. It features three 'Retail POS terminal' blocks on the left, each with a handwritten label '550'. These terminals are connected to a central 'Retail Back-End System' block, which is labeled '555'. The 'Retail Back-End System' is connected to a 'Transaction Privacy Clearing House' block, labeled '510'. The 'Transaction Privacy Clearing House' is connected to a 'Settlement (VISA, etc.)' block, labeled '560'. A dashed line connects the 'Transaction Privacy Clearing House' and the 'Settlement (VISA, etc.)' block.

Diagram 5b: An alternative embodiment of the retail system modified to support the interaction of legacy POS terminals with the Digital Wallet system

Fig. 6

[illegible]



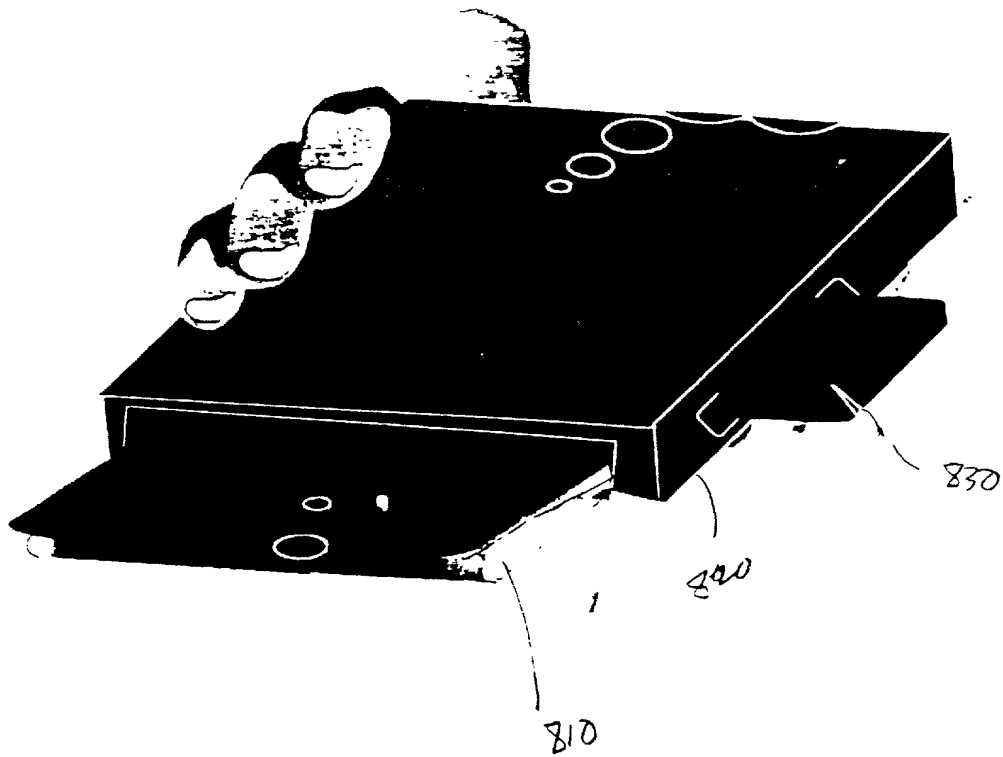


Fig 8

Digital Wallet and
Privacy Card

Digital Wallet

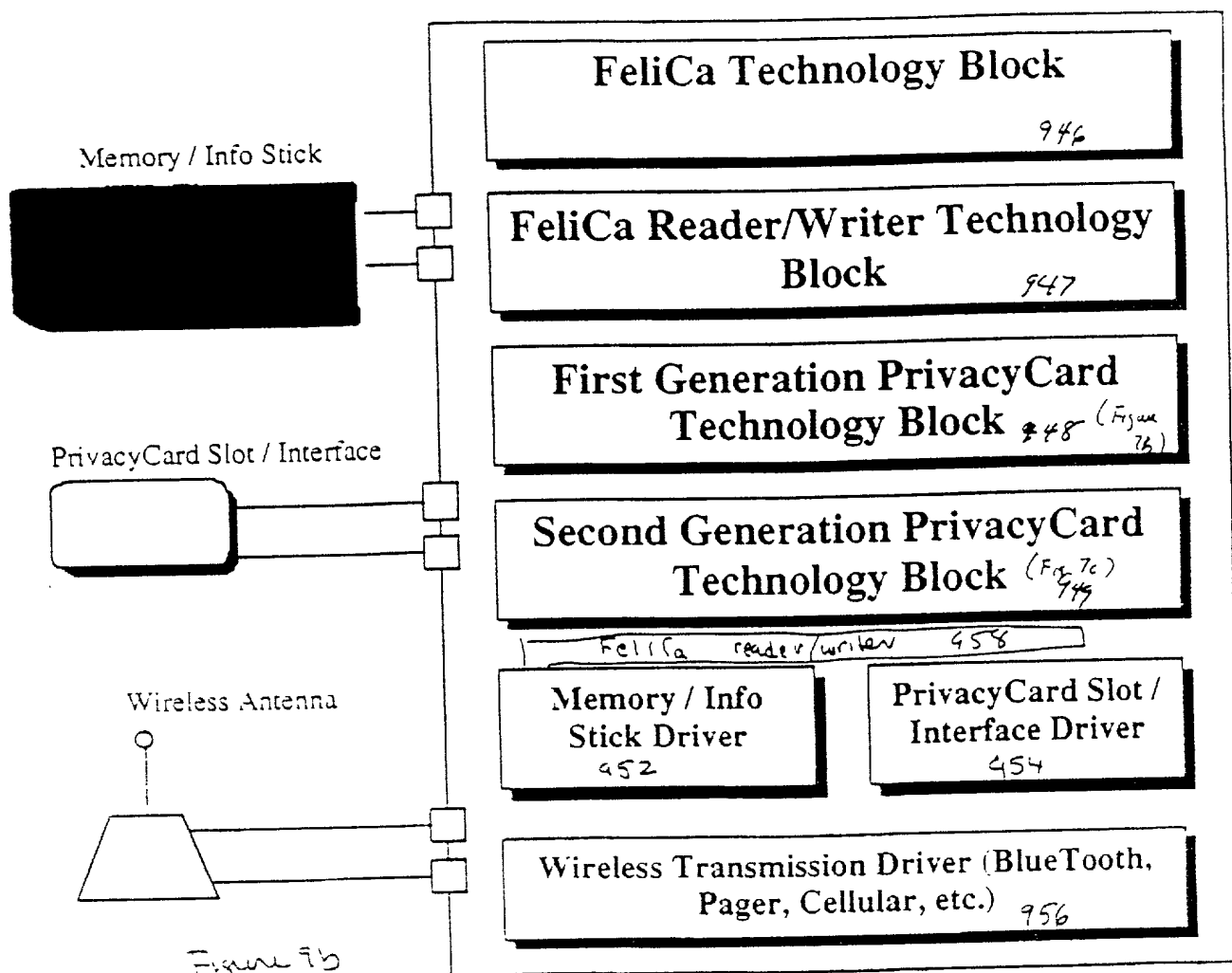


Figure 7b

09/3545-120700

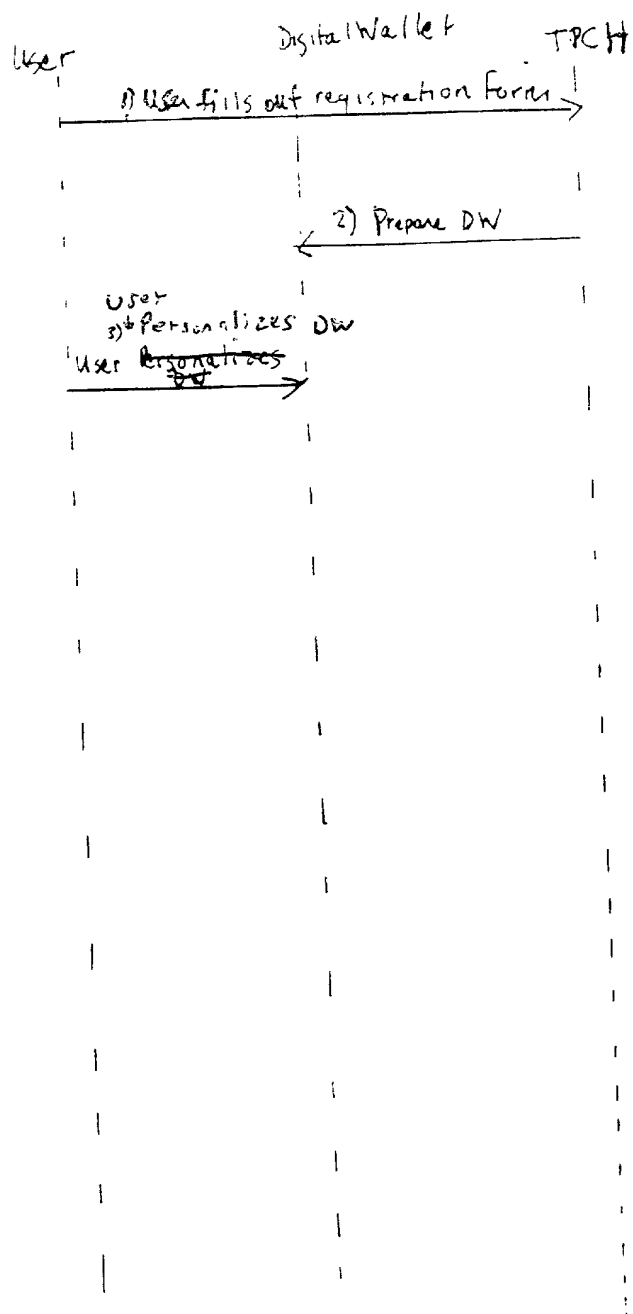


Fig 10

Setup of Digital wallet

```

sequenceDiagram
    participant User
    participant DW as Digital Wallet
    participant Laptop as Laptop PC
    participant TPCH

    User->>Laptop: 1) submit electronic registration, provide fingerprint
    Laptop->>TPCH: 1102) encrypt & deliver fingerprint sample + registration
    TPCH->>DW: 1103) initialize DW device, deliver to user
    DW->>User: 1104) activate & verify delivery, user
    User->>TPCH: 1105) confirm successful delivery, user
    TPCH->>DW: 1106) enabled for use
    DW->>User: 1107) display ready message
    
```

Digital Wallet Setup .
(AI/ML Embedment)

09733516 420700

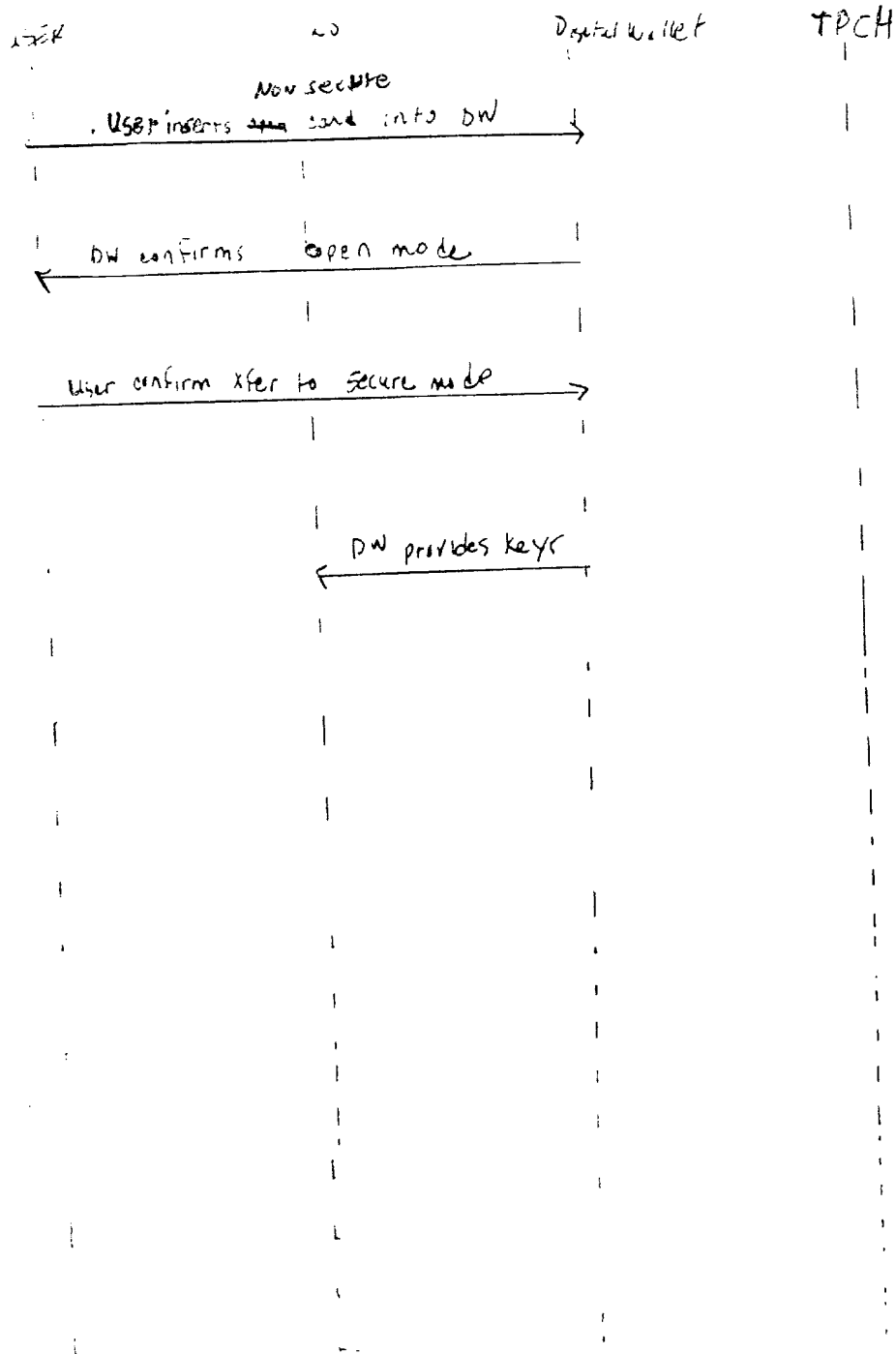
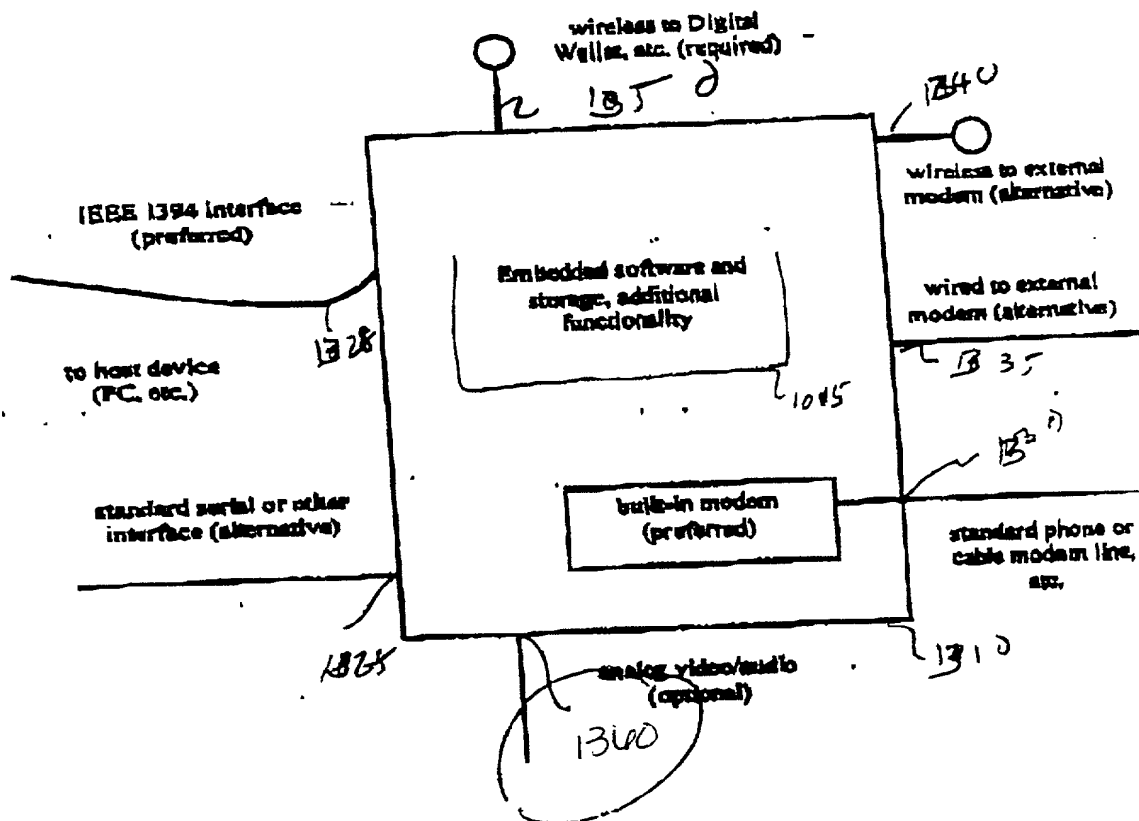


Fig 1A

conversion of card to secure

00733516 120700



POS Terminal

Fig. 13

Fig 14

START



Initiate Transaction 1505



Info
Privacy Card Provided
to TPCIT 1510



TPCIT confirms transaction
and sends confirmation
to vendor and user 1520



Vendor completes
transaction 1525



End

Fig. 15

Detail Transaction

```

sequenceDiagram
    participant User
    participant DigitalWallet as Digital Wallet
    participant Browser
    participant PPOSTerminal as PPOS Terminal
    participant TPCH
    participant Vendor

    User->>Browser: 1) trigger purchase
    Browser->>PPOSTerminal: 2) request purchase, provide purchase record
    PPOSTerminal->>DigitalWallet: 3) validate user, get account info
    DigitalWallet->>User: 4) request fingerprint, account selection
    User->>DigitalWallet: 5) provide fingerprint, account selection
    DigitalWallet->>PPOSTerminal: 6) user validated, account data
    PPOSTerminal->>TPCH: 7) transaction request: purchase record, DW ID, account info
    TPCH->>PPOSTerminal: 8) transaction confirmation
    PPOSTerminal->>User: 9 - 11) transaction confirmation
    TPCH->>Vendor: 12) ship physical content
    User->>TPCH: 13) secure content distribution
    User->>TPCH: 14) confirmation of receipt
    TPCH->>Vendor: 15) settle funds
    
```

Web Transaction

```

sequenceDiagram
    participant User
    participant Digital_Wallet as Digital Wallet
    participant Tpch as Tpch
    participant Vendor
    participant Distributor
    participant Package

    Tpch->>Distributor: 1801) assign unique package_ID
    Tpch->>Vendor: 
    Vendor->>Distributor: 
    Distributor->>Digital_Wallet: 1802) encode user_physical_address, related to package_ID
    Vendor->>Package: 1803) package content, apply coded label
    Package->>Distributor: 1804) pickup, read label, associate address
    Distributor->>User: 1805) deliver to user
    User->>Digital_Wallet: 1806) activate, confirm acceptance of delivery
    Digital_Wallet->>Tpch: 1807) confirm acceptance of product
    Digital_Wallet->>Distributor: 
  
```

Delivery of Product

```

sequenceDiagram
    participant User
    participant DigitalWallet as Digital Wallet
    participant Tpch as TPC-H
    participant Vendor
    participant Distributor
    participant Package

    User->>Package: 1901) repackaging material
    User->>DigitalWallet: 1902) activate, select Return Package
    DigitalWallet->>Package: 1903) apply coded label with package_ID, vendor_address
    DigitalWallet->>Vendor: 1904) contact vendor, distributor for return
    DigitalWallet->>Distributor: 
    Distributor->>Package: 1905) pick up, decode label for package_ID, vendor_address
    Distributor->>Vendor: 1906) deliver to vendor
    
```

Return of Product

```

sequenceDiagram
    participant User
    participant Digital Wallet
    participant DTV
    participant TPCH
    participant Vendor
    participant POS Terminal

    User->>Digital Wallet: 2001) activate, select Purchase
    Digital Wallet->>POS Terminal: 2002) request product info
    POS Terminal->>Digital Wallet: 2003) return product information
    Digital Wallet->>TPCH: 2004) issue transaction request, provide data & DW ID
    TPCH->>Vendor: 2005) transaction data & DW ID
    Vendor->>TPCH: 2006) data mining, direct marketing
    TPCH->>Digital Wallet: 2007) full message or content reference
    Digital Wallet->>User: 2008) notify user
    User->>Digital Wallet: 2009) view content, respond as needed
    Digital Wallet->>DTV: 
    Digital Wallet->>Vendor: 
  
```

Data Mining

